1. As shown in this chapter, write a pseudocode statement that generates a random number in the range of 1 through 100 and assigns it to a variable named rand.

Import random()

Declare int rand

main()

set rand = random(1, 100)

Display rand

End

1. The following pseudocode statement calls a function named half, which returns a value that is half that of the argument. (Assume both the result and number variables are Real.) Write pseudocode for the function.

Set result = half(number)

//Set the function first like

Function Real half(real num)

return num / 2

End function

Import half()

Declare real number

Declare real result

main()

Display “Please enter a number.”

Input number

Set result = half(number)

Display result

End

1. A pseudocode program contains the following function definition:

Function Integer cube(Integer num)

Return num \* num \* num

End Function

Write a statement that passes the value 4 to this function and assigns its return value to the variable result.

Import cube()

Declare integer num

Declare integer result

main()

Display “Please enter a number”

Input num >>> Num will equal 4

Set result = cube(num)

Display result

1. Design a pseudocode function named timesTen that accepts an Integer argument. When the function is called, it should return the value of its argument multiplied times 10.

Function Integer timesTen(integer num) <<< Creating a function

return num \* 10

End function

1. Design a pseudocode function named getFirstName that asks the user to enter his or her first name, and returns it.

Function String getFirstName()

Declare String firstname

Display “Enter your first name: “

input firstname

Return firstname

End Function

1. Assume that a program has two String variables named str1 and str2. Write a pseudocode statement that assigns an all uppercase version of str1 to the str2 variable.

Set str2 = toUpper(str1)

Debugging Exercises

The programmer intends for this pseudocode to display three random numbers in the range of 1 through 7. According to the way we’ve been generating random numbers in this book, however, there appears to be an error. Can you find it?

1. // This program displays three random numbers
2. // in the range of 1 through 7.
3. Declare Integer count >>> Need to import the module
4. >>> Need to establish main()
5. // Display three random numbers.
6. For count = 1 To 3
7. Display random(7, 1) >>> Needs to be 1 to 7

End For

Can you find the reason that the following pseudocode function does not return the value indicated in the comments?

1. // The calcDiscountPrice function accepts an item's price and
2. // the discount percentage as arguments. It uses those
3. // values to calculate and return the discounted price.
4. Function Real calcDiscountPrice(Real price, Real percentage)
5. // Calculate the discount.
6. Declare Real discount = price \* percentage
7. // Subtract the discount from the price.
8. Declare Real discountPrice = price – discount
9. // Return the discount price.
10. Return discount

End Function

The function is returning the discount but not discountPrice, which is where the actual calculation takes place.

Can you find the reason that the following pseudocode does not perform as indicated in the comments?

1. // Find the error in the following pseudocode.
2. Module main()
3. Declare Real value, result
4. // Get a value from the user.
5. Display "Enter a value."
6. Input value
7. // Get 10 percent of the value.
8. Call tenPercent(value)
9. // Display 10 percent of the value.
10. Display "10 percent of ", value, " is ", result
11. End Module
12. // The tenPercent function returns 10 percent
13. // of the argument passed to the function.
14. Function Real tenPercent(Real num)
15. Return num \* 0.1

End Function